

TECHNOTES

By **KARL LUDVIGSEN**

C VALVES IN XK HEAD?

I'd like to modify a standard 1954 Jaguar engine enough to obtain 300 bhp on gasoline. To this end can you tell me if I can install 1 $\frac{5}{8}$ inch exhaust and 1 $\frac{7}{8}$ inch intake valves in a standard head? We want to obtain new seat inserts, jig bore the head properly and install the larger valves. We need dope on the seat composition, the amount of "meat" around the existing valve seats, and the method of fitting new seats.

James W. Graham
Indianapolis, Indiana

We're not certain that the big valves can be fitted to an early head with safety, since Jag probably had a good reason for fitting a new head casting to the C.Types. Judging by the amount of metal visible in the sawed heads we've looked at, though, it might be worth trying. The best approach to getting new valve seats would be a call to your dealer or a note to the factory. The stock inserts are centrifugally cast iron — not too special — while some of the competition versions use bronze inserts. We don't have specific dope on the installation of the latter, but following is info on the standard insert installation.

Once you've obtained the inserts, either factory or special, mike out their outside diameters. The ID of the new hole in the combustion chamber, with the head at 68 degrees F, should be .003 inch less. That's the amount of interference fit, and there's no taper. The old inserts can be removed by boring them out until they collapse. You can then check the depth of the bore and see if that dimension is suitable for the new insert. The .003 interference can be obtained by making the new bore .010 or .015 inch smaller than the miked OD of the new insert, and then grinding the latter down to exact size.

To get the inserts in, heat the head for one hour from cold in an oven at 450 degrees F. Cool the inserts also, if possible. This done, drop the inserts in and fit them as evenly and solidly as possible.

Now, to see if all is in order, insert a new valve of the type you intend to use and fit the camshaft, without the tappet, etc. The distance from the valve stem end to the back, low side of the cam should be .320 inch plus the appropriate valve clearance. This includes .095-.097 inch for the valve adjustment shims. The allowable range here is .085-.103 inch. If the distance is larger than .320 plus clearance, grind the seat away. That's the way the factory wants it done, and you're free to take off from there.

SEEKING PORSCHE PERFECTION

In the road test of the Porsche 1600 (June, 1956 SCI) it was pointed out that the shift control suffered from a long throw and excessive free play. Certainly those who race this fine car are not content with this condition. What's being done to remedy this deficiency?

Do you feel that negative camber on

the rear wheels of a 1600S cabriolet would reduce its tail-wagging characteristic just a little? How much would you recommend? Do you know of any successful attempts to apply supercharging or fuel injection to the 1600S?

Robert J. Hatala
New Haven, Connecticut

While the Porsche shift linkage does draw condemnation from critical road testers and owners, its vagueness and long throw don't seem to be a handicap under racing conditions. The gearbox itself is still a tight, fast-working unit. You might, however, check those control links that are accessible through a plate at the center, just behind the front seats. Remember that much of the pleasing lightness of the Porsche shift is due to the high mechanical advantage given by the long lever and resulting spread-out shift pattern.

We find that the 1600 Porsches are much less "tail-happy" than the preceding models, and doubt that a change of camber is called for. You should try Pirelli or Michelin X (preferably the latter) tires on the rear wheels only, at first. Also try tire pressures at least five pounds higher in the back than in the front — except with the Michelins. Superchargers have been applied to Porsches, but at considerable trouble and expense. There's no kit available yet. We know of no fuel injection installations, which doesn't mean that a Hilborn rig couldn't be adapted to this engine.

MORE MODS FOR MG

Heedless of possible wrath from the gentlemen at Abingdon-on-Thames, I ask a few questions about improving performance of a 1952 TD. Is there any substitute gear made with a higher ratio than the unsuitably low 17.5/1 of first? I have in mind a ratio about halfway between stock first and second. I notice in your January, 1957 issue that the MGA has compact gauze-type air cleaners; are these adaptable to the TD? Would any performance be gained by the addition of a second electric fuel pump?

Finally, do you have any performance figures for the MG-Meyer Drake 1500 cc combination? I'd expect much better low-speed torque.

Bruce Cross
Northbrook, Illinois

As a side note I might mention that the MG men, far from resisting attempts to modify their cars, have gone so far as to issue an excellent step-by-step manual on that very subject for the XPAG engine. They may still be available from distributor or the factory.

Only thing I can suggest on your low gear situation is the use of a TC gearbox. Besides being rugged in design, this has high ratios throughout. Its low of 3.38 corresponds to your 3.49, which would be some improvement, and it will bolt right to your engine. Hellings Equipment long marketed compact mesh-type air cleaners for TC's and TD's. You should be able to

obtain them through your local speed shop. Using your stock carb setup, no advantage would be gained by adding another fuel pump.

Back around 1952-3 both Bill Lloyd and Dave Michaels on the east coast were racing with TD's powered by 1700 cc ex-midget Offy engines. These performed well, but never really startled anyone. They were not street machines. The new chain-drive-cam 1500 Offy being developed by George Beavis promises to be more practical from both cost and maintenance standpoints. We'll have all the details for our readers soon.

SUPERHEATED JAG

I have a 1957 Jaguar MC Roadster that runs hot — between 85 and 90 degrees C. I've changed the thermostat to one that opens between 158 and 163 degrees F, but it still runs hot. I realize that these temperatures are not too serious, though normal should be 75 to 80 C, but I'm worried about the effects of warmer weather.

William Clark
No. Hollywood, Calif.

Jaguar has worked hard on getting these cars to run at a reasonable temperature, and should have it by now. Be sure your fuel/air ratio isn't too lean, and that ignition timing is right. To adjust your present thermostat further, unsolder the nut on its center spindle and unscrew it a couple of turns for a start. Resolder or otherwise lock it, and check the gauge level after running. Short of major ducting changes, this is the most you can do. If you can keep it around 85 degrees C, you're in fine shape.

QUICKER CLUTCHING MGA

I'm having clutch trouble with my MGA and know several others with the same pains. It slips badly when making a shift at high rpm. I believe the new hydraulic control system is at fault and wonder if this can be replaced by a more conventional mechanical linkage. Can I use a new facing or heavier springs to correct the trouble?

Warren Davis
Princeton, N.J.

I know the problem but doubt that it's due to the hydraulic actuation system. This could only be at fault if the orifices in the system were so small that the fluid couldn't return from the clutch cylinder to the operating cylinder quickly enough. The clutch slippage lasts longer than this would. Anyway, the Ferrari/Lancia Grand Prix car squeaks by with such a system to work its rear-mounted clutch, so it can't be too unsound.

Springs seem to be the culprits, so you'll be glad to hear that the factory-stocked competition clutch assembly for the TD will fit the MGA. This includes heavier springs which should cure the slippage. You could also rebuild your present assembly to incorporate heavier coils.